(No Model.)

L. M. HOSEA.

Velocipede.

No. 228,996. Patented June 22, 1880.

Fig. 1

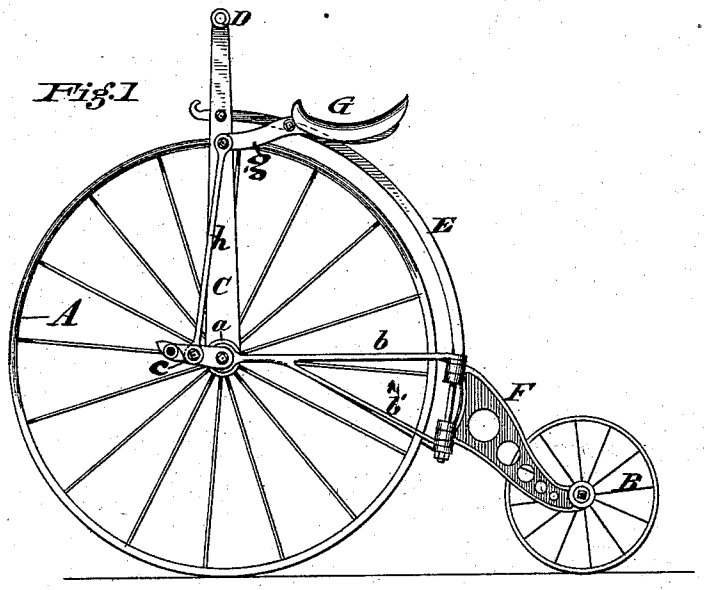


Fig. 2

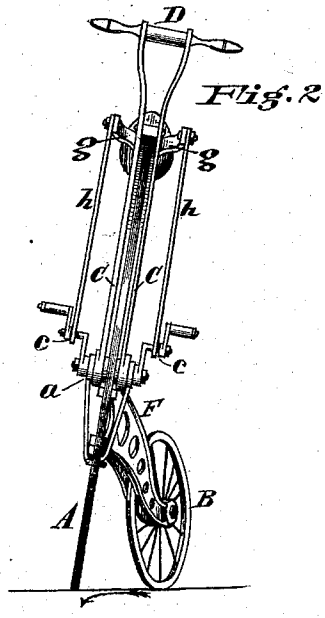


Fig. 3

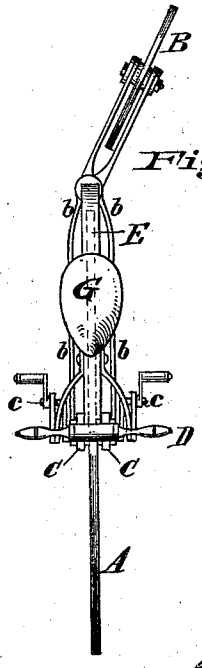
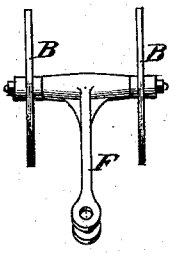


Fig. 4



Witnesses:

Henry Groh

C. F. Heuser

Inventor:

Lewis M. Hosea

UNITED STATES PATENT OFFICE.

LEWIS M. HOSEA, OF CINCINNATI, OHIO.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 228,996, dated June 22, 1880.

Application filed April 22, 1880. (No model.)

To all whom it may concern:

Be it known that I, LEWIS M. HOSEA, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Velocipedes, of which the following is a specification.

My invention relates to improvements in that class of velocipedes employing a driving-wheel operated by foot-cranks, and one or more trailing-wheels, and its object is to improve their construction and utility.

In these vehicles the driving-wheel is mounted in a swiveling support in order to allow the wheel to be turned independently of the seat for steering purposes, which construction and operation entails many well-known disadvantages.

In my improved velocipede the driving-wheel does not swivel independently of the seat-frame, but the relation of the seat-frame and driving-wheel remains unchanged, the steering being effected by those natural and instinctive movements of the body and the resulting positions of the vehicle which are assumed as a guard against centrifugal force in turning curves.

To this end my invention consists in mounting the driving-wheel in a rigid seat-frame and connecting at the rear thereof a trailing-wheel frame in such manner that the inclination of the main wheel from a perpendicular plane causes the trailing wheel or wheels to stand at a horizontal angle therewith, and thus act as a rudder to steer the vehicle, and at the same time prevent oversetting.

It consists, also, in the additional provision, in combination with the driving-wheel so mounted in a rigid frame, of double cranks and an actuating-seat and connections.

It consists, also, in certain details of construction hereinafter pointed out.

My invention is embodied in mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved velocipede; Fig. 2, a front elevation of same; Fig. 3, a plan view of same; and Fig. 4, a plan view of the trailing-frame detached, having two trailing-wheels.

Similar letters of reference indicate similar parts throughout the drawings.

A indicates the main or driving wheel, and B the trailing-wheel, of my improved velocipede. The main wheel A is mounted between two uprights, C C, which have their bearing upon the axle *a*, and are secured above the wheel by a cross-piece, D, which forms the handle and support for the rider. An arched bar, E, is secured between the uprights C C, just over the wheel, and extends thence to the rear parallel with the periphery of the wheel.

Horizontal braces *b b* on either side of the driving-wheel support the lower part of the arch-bar E from the axle *a*, or from the uprights C, the parts C C E and braces *b b* forming a rigid frame, in which the driving-wheel A revolves, carrying the driving-cranks *c c* at the extremities of the rigid axle *a* outside of the uprights C, provided with the usual wrists and foot-rests. The lower rear extremity of the arch-bar E is prolonged below the horizontal braces *b b* into a pintle standing in the plane of the driving-wheel, but somewhat out of the vertical line, as shown in Fig. 1. Upon this pintle is hinged a frame, F, carrying one wheel or a pair of trailing-wheels, B, turning loosely upon an axle. Supplemental strengthening-braces *b'* may extend from the braces *b b* to the lower end of the pintle. The inclination of the pivotal connection between the main and trailing frames will cause the main frame to incline from the perpendicular whenever the two frames are placed at an angle with each other, and, vice versa, the inclination of the main frame will throw the trailing-frame into such angle with it.

It will be readily understood, therefore, that as the rider, by allowing his weight to act on one side or the other, can produce the desired inclination of the main frame, he can thus manipulate the trailing-frame, which becomes a rudder to the vehicle and determines its relative course. As the movements of the body for this purpose are natural and instinctive as a guard against centrifugal force in turning curves, the steering of the vehicle is easily accomplished.

The remaining feature of my invention relates to an actuating-seat and its attachments.

The seat G is mounted on two levers, *g g*, which are pivoted to the arch-bar E in the rear of the uprights C. To the forward end of the levers *g* are pivoted connecting-rods *h*,

which connect them with the intermediate wrists of the cranks *c c*.

When the actuating-seat G is used with the velocipede the cranks of the driving-wheel are set in the same radial relation with the axle.

It will be readily seen that when the vehicle is in motion the seat will rise and fall, and that the alternate transfer of the rider's weight from the actuating-seat to the foot-cranks at proper intervals will propel the vehicle. The actuating-seat and connections may be dispensed with and the vehicle used in the same manner as ordinary velocipedes, with the foot-cranks set at right angles with each other.

The operation of my improved velocipede has already been indicated. It will be observed that it is necessary that the trailing frame and wheel should remain always in a vertical plane, and this is more easily accomplished by using two trailing-wheels, as shown in Fig. 4. But with a little skill, soon acquired by the operator, a bicycle constructed as described can be actuated in the desired manner with ease and certainty, for as soon as the trailing-frame is thrown at an angle to the seat-frame, which may be done by a slight movement or twist of the rider's body, the weight of the rider on the hinge tends to increase that angle and cause the vehicle to travel in a small circle. But as such tendency is counteracted by the tendency of the trailing-wheel to follow its leader in a straight line, the rider can easily dispose his body so as to govern these opposing forces at his will.

Having described my invention, I claim and desire to secure by Letters Patent—

1. A velocipede consisting, essentially, of two frames, one containing the driving-wheel and rider's seat and the other a trailing wheel or wheels, said frames being hinged together between the wheels in a vertical plane, and arranged to be thrown into horizontal angles with each other by the inclination of the driving-wheel frame from the perpendicular, thus actuating the trailing-frame as a rudder for steering purposes, as set forth.

2. The driving-wheel A and supporting-frame, consisting of uprights C C, arch-bar E, and braces *b b*, in combination with the trailing-frame F, pivoted upon the arch-bar in rear of the driving-wheel, and carrying one or more wheels, B, as set forth.

3. In a velocipede consisting, essentially, of a driving-wheel and one or more trailing-wheels, mounted in independent frames hinged together between said wheels, an actuating rising and falling seat, connected by pitmen with the driving-cranks, and arranged above the driving-wheel, so that the rider seated thereon can apply his weight alternately directly to the seat and cranks, as set forth.

4. In combination with the driving-wheel and trailing-wheels, having their frames hinged, and operating as shown and described, the seat G, pivoted to the arch-bar E, connecting-rods *h-h*, and double cranks C C, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LEWIS M. HOSEA.

Witnesses:
HENRY GROSS,
C. F. HESSER.